MUTARS®

implantcast

KRI M-O-M

knee reconstruction implant

surgical technique

Femorotibial M-O-M coupling

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surgical technique

Femorotibial M-O-M coupling

MUTARS® was developed in co-operation with
Prof. Dr. W. Winkelmann (former director)
and Prof. Dr. G. Gosheger (director), Clinic and
Polyclinic for General Orthopedics and Tumororthopedics
at the University Hospital of Münster, Germany.
MUTARS® has been in successful clinical use since 1992.

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Nota Bene: The described surgical technique is the suggested treatment for the uncomplicated procedure. In the final analysis the preferred treatment is that which addresses the needs of the individual patient.

The silver-coating

Infections represent the most severe complications of tumour arthroplastic treatments. Although local and systemic antibiotic treatments are considered, the scientific literature reports of infection rates from 5 to 35 percent [1]. Reasons for these high rates are, for example, the long surgery time, the large incisions and the immunsupression due to chemo therapy and radio therapy as well as the increasing resistance of the bacteria against antibiotic drugs.
Silver, in particular free silver ions, is well known for its broad-spectrum antimicrobial activity. The silver-coating has been shown to reduce bacterial colonization on the device surface.
Until now only non-articulating surfaces and surfaces without direct bony contact are coated with silver. In the catalogue information of this surgical technique you can find the supplement *S indicating which MUTARS® components are available in a silver-coated version. The eight digit REF-number receives an addition after the last digit (e.g. 5220-0020S).

Important intra-operative instructions for the use of silver coated implants

It is not permitted to flush the wound with antiseptics that contain H_2O_2, Iodine or heavy metals (such as Betaisodona®) and acetic acid during surgery since this can lead to a subsequent loss of effectiveness of the silver-coating due to their oxidative properties. Alternatively, solutions such as NaCl or Lavasept® and Prontosan® can be used. The additional use of antibiotic-containing bone cement can be an advantage particular in case of a septic revision.

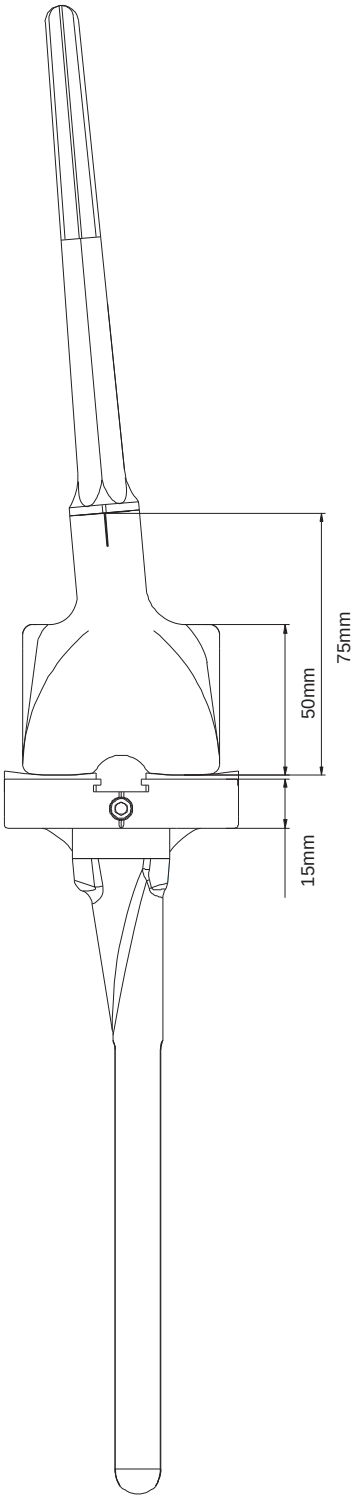
The TiN-coating for allergy prophylaxis

All metallic implant components release ions to their environment over time. In some patients such ions can elicit allergic reactions. Nickel, cobalt and chromium, which are elements of the base material CoCrMo of the articulating implant components, are considered the most frequently allergy eliciting metals [2]. The TiN-coating is biocompatible and acts like a barrier; the potential release of allergy eliciting ions of the base material is reduced to a minimum [3]. Also in clinical practice there have never been any evidence of allergic reactions with implants that have been TiN coated showing an intact surface [5]. Therefore the TiN-coating on implant components is especially suitable for patients with sensitivity to nickel, chromium or cobalt [4][5].
Since almost all components of the MUTARS® tumor system consist of titanium alloy, this only concerns those components, which are made of a CoCrMo alloy. The REF-numbers of the TiN-coated implants have the suffix N after the last digit (e.g. 5720-0005N). Items which are available with silver and TiN-coating have the suffix SN after the last digit (e.g. 5720-0005SN).

***S**: Implants are available with silver-coating!
***N**: Implants are available with TiN-coating!
***SN**: Implants are available with silver and TiN-coating!

[1] Gosheger et al. 2004. Silver-coated megaendoprostheses in a rabbit model – an analysis of the infection rate and toxicological side effects. Biomaterials 25, 5547-5556.
[2] Eben R et al. (2009) Implantatallergieregister - ein erster Erfahrungsbericht. Orthopäde 38: 557-562
[3] Wisbey et al. (1987) Application of PVD TiN coating to Co-Cr-Mo based surgical implants. Biomaterials, 11
[4] Prof. Thomas LMU München Final Report Effect of a TiNbN or TiN surface coating on cobaltchromium- molybdenum and stainless steel test specimens regarding the release of nickel, chromium and cobalt: evaluation via eluate analysis and in-vitro cytokine release from peripheral human blood cells, Data on file
[5] Baumann A. (2001) Keramische Beschichtungen in der KTEP Standardlösung für Allergiker. JATROS Orthopädie & Rheumatologie 6: 16-17

System Overview



RS stem
ø14-20mm cementless
ø12-18mm cemented

KRI M-O-M

coupling 15mm

PE-insert

tibial plateau M-O-M
xsmall, small, standard, large
cemented / cementless

stem for tibial plateau
length: 120, 160, 200mm
ø12-18mm cementless
ø11-15mm cemented

tibial spacer
25, 35, 50 mm (bicondylar)
5,10,15, 20 mm (unicondylar)

Note: Please notice that the amount of implants and instruments send with an individual shipment may differ from the information in the catalogue information of this brochure. Please make sure, during the preoperatively planning, that all necessary implants and instruments are available for the surgery

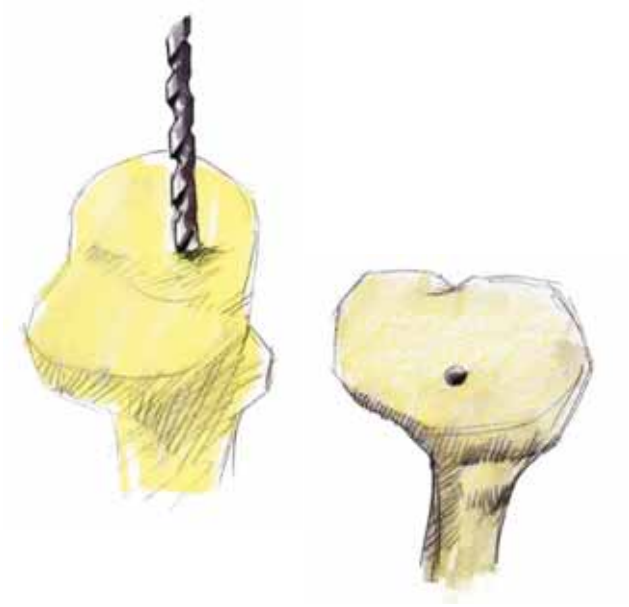


figure 1a and 1b

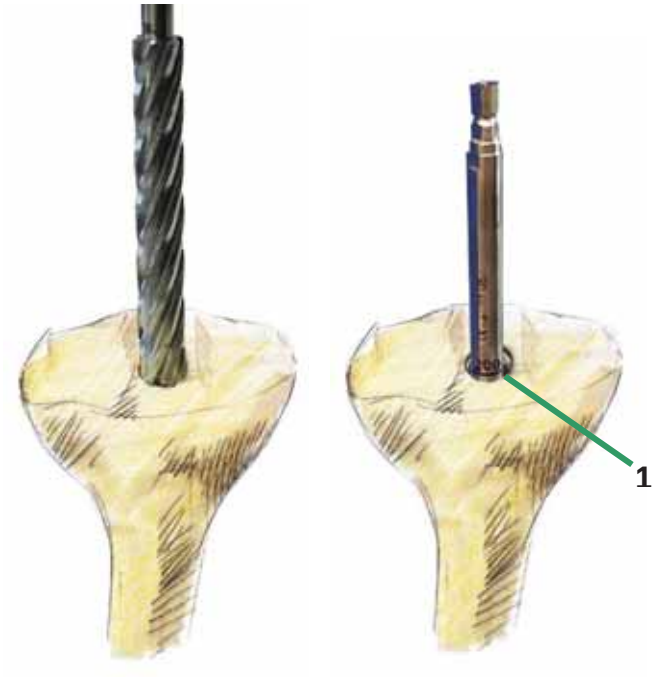


figure 2a and 2b

Distal femoral resection

Resect the amount of 75mm of the distal femoral condyles. If the upper part of the KRI shall be inserted in the medullary cavity a resection can be minimized to 50mm (see page 1).

Remove the menisci.

Tibial bone preparation

Open the tibial medullary cavity with the universal drill ∅ 6mm (fig. 1a and 1b). The drilling should be orientated to open the center of the medullary cavity (eminentia intercondylaris: ventral 1/3, dorsal 2/3).

Enlarge the opening of the medullary cavity with rigid drills (fig. 2a and 2b).

To choose the correct reamer size for the use of a **cementless tibial stem** see table 1, for the use of a **cemented tibial stem** see table 2.

Table 1: cementless implantation
Tibial stem 12mm ➔ drill 11mm
Tibial stem 14mm ➔ drill 13mm
Tibial stem 16mm ➔ drill 15mm
Tibial stem 18mm ➔ drill 17mm

Table 2: cemented implantation
Tibial stem 11mm ➔ drill 13mm
Tibial stem 13mm ➔ drill 15mm
Tibial stem 15mm ➔ drill 17mm

To ascertain adequate depth is reached, the drills have depth marks (120mm for 120mm stems, 160mm for 160mm stems and 200mm for 200mm stems) corresponding with the tibial stem length (fig. 2a and 2b). The last drill used is left in the tibial canal.

The tibia resection block 0° is attached to the intramedullary tibial alignment guide and the cutting block is placed over the tibial drill left in the intramedullary canal (fig. 3a).

Adjust the rotational alignment and lock the alignment guide by impacting the two spikes into the tibial surface and lock all quick connectors (fig. 3b).

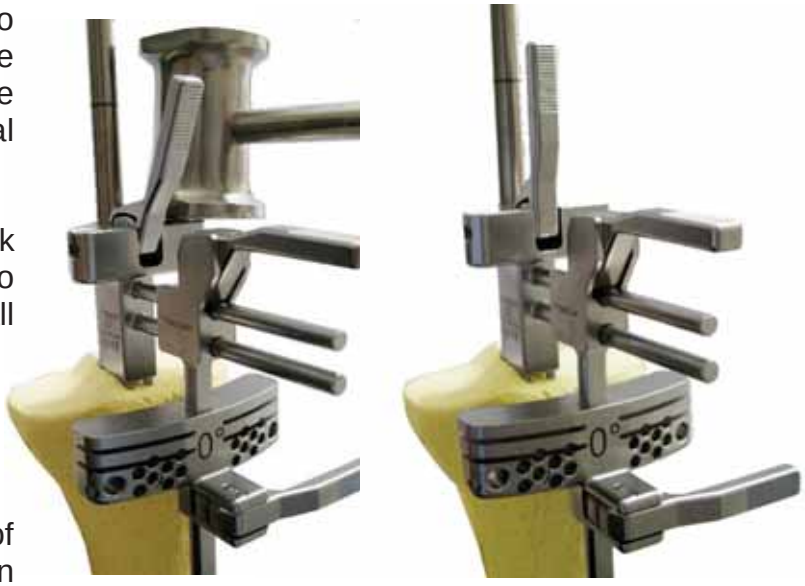


figure 3a and 3b

Slide the tibial stylus into the upper slot of the resection block to adjust the resection height. Make sure that the marking SLOTTED[1] is directed to the bone, when a slotted cut is planned (fig. 4).
If a nonslotted cut should be performed the NONSLOTTED marking on the stylus should point to the bone.

For the primary bone cut, make sure that the stylus is adjusted to the 15mm mark[2] and 15mm of bone will be removed from the tibia (fig. 4).
In revision cases normally a minimum bone cut is recommended and the stylus should be adjusted to the 2mm height. When the correct resection height is determined, please lock the quick connector at the resection block.

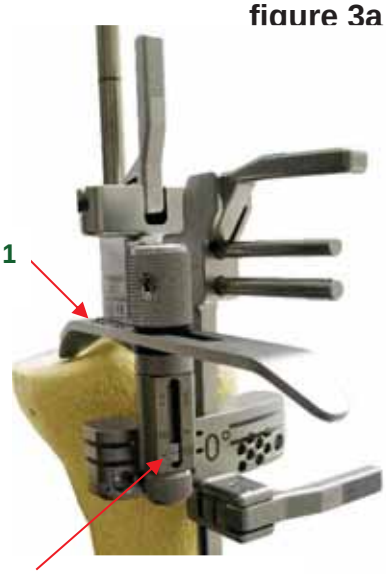


figure 4

Please insert the fixation pins in the marked level to fix the block to the bone. Remove the tibial resection stylus. If necessary please use the 3,2mm drill to predrill the holes (fig. 5).

figure 5

figure 6a

Double check the resection angle and height by using the resection check (fig. 6a).

figure 6b

Use the ACS® saw blade to resect the bone. Prevent damaging of the intramedullary drill. If necessary please remove the drill before resectioning. For additional stability a pin can inserted in the oblique hole (fig. 6b).

Please check the quality of the cut. Make sure that the cut is totally flat and remove the resection block.

figure 7

The resected tibia is checked and the reamer guide with the tibial centering guide is slide over the tibial reamer in place. (fig. 7). The mark MEDIAL should be placed correctly to the medial side.

The right mediolateral alignment should be established and the tibial reamer guide is fixed with two pins (fig. 8a). The tibia reamer guide and the intramedullary tibial reamer are now removed.

figure 8a figure 8b

Use of tibial spacer

The joint line can be restored using tibial spacers or bone grafts. If necessary, additional bone should be resected to accommodate the trial tibial spacer. The trial tibial spacer is clicked under the tibial reamer guide. (fig. 8b). The height of the spacer should correspond with the one fixed at the preoperative planning.

Combine the tibial reamer and the T-handle and ream carefully until the reamer is stopped by the chimney of the reamer (fig. 9a and 9b). It is strongly recommended **not** to use power tools for the reaming.

figure 9a figure 9b

figure 10a **figure 10b**

The tibial fin punch is used to continue the tibial preparation. The punch should be punched down until it is stopped by the tibial reamer guide (fig. 10a and 10b).

figure 11a **figure 11b**

In case of sclerotic bone the tibial drill can be used. A drill sleeve is placed inside the tibia reamer guide to accommodate this drill. The drill sleeve is placed medially and the canal is drilled. After turning the sleeve 180°, the lateral side should be drilled.

Remove all instruments.

Preparation of the distal femur

Drill the femoral medullary cavity using a flexible medullary reamer 3mm smaller than the diameter of the preoperatively chosen **cementless** RS stem (fig. 12). Drill to a depth equal to the length of the RS stem.
Connect the slide hammer with the broach which is of the same size as the chosen cementless stem (fig. 13).

For cemented use prepare the cavity with a reamer which is 1mm smaller than the **cemented** RS stem (fig. 12). Drill to a depth equal to the length of the RS stem. Connect the slide hammer with the broach which is 2mm larger than the chosen stem (fig. 13).

figure 12

Make sure that the curvature of the broach corresponds to the ante-curvature of the femur during the preparation of the intramedullary canal

Prepare the medullary cavity with the RS broach. The mark '**50mm'** shows the joint line of the prosthesis. If an extension piece of 25mm has been planned refer to the **'75mm'** mark of the broach (fig. 14).

The 250mm RS stem is prepared by predrilling with the flexible reamer to a depth of 250mm.
Subsequently, the 200mm broach is used. Also in this case, the mark '50mm' shows the joint line of the prothesis. If an extension piece of 25mm has been planned, also refer to the **'75mm'** mark of the broach.

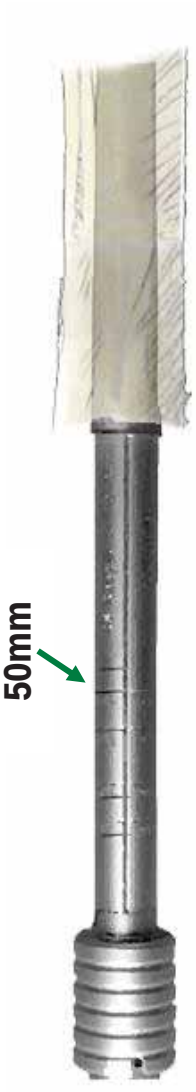


figure 13 **figure 14**

figure 15a and 15b

figure 16a and 16b

Trial reduction

Connect the RS stem with the KRI through the taper connection (fig. 15a). Consider the curvation mark on the stem and the KRI to meet the correct femoral alignment. (If a 25mm extension piece shall be used, please add it between the stem and the KRI) (fig. 15a).

Do not insert the screw for trialing, this allows an easy readjustment of the femoral rotation afterwards.

Impact the components into the femoral bone using the impactor (fig. 15b).

If the stem should be implanted separately please connect the stem to the impactor and impact the stem (fig 16a). Please mount the KRI and the optional extension sleeve onto the stem (fig. 16b).

For a minimized bone resection the proximal part of the KRI component can be inserted into the distal femoral bone (fig. 17).

figure 17

Use of trial implants

To check all resections performed, the tibial and femoral trial implants are used.

Screw the trial stem under the tibial trial of the selected size (fig. 18).

The stem is medialized and care should be taken to place the trial stem into the correct medio-lateral position. If necessary a trial spacer can be clicked under the trial tibial implant (fig. 18).

figure 18

The tibial trial and stem can be inserted using the tibial impactor (fig. 19a and 19b).

figure 19a

figure 19b

The corresponding trial insert is now placed on the tibial trial implant (fig. 20a), using the PE-insert setting instrument (fig. 20b).

Perform a trial reduction to assure that the correct femoral rotation is achieved and the joint line is restored in the correct height (fig. 21).

figure 20a

figure 20b

Remark
Please notice that a coupling of the joint components is not possible at this stage when using the trial components. At a later stage the joint stability can be checked using the final implant components and the coupling.

figure 21

figure 22a

figure 22b

Remove the trial insert. Screw the slide hammer into the tapered hole of the trial plateau and remove the trial components (fig. 22a and 22b).

Tibial component assembly

Attach the selected tibial stem onto the cone of the tibia component and connect the two parts with the screws provided. A torque wrench 3.5mm hex screw driver (fig. 24) should be used. Any tibial spacers should be added in the same way (fig. 23a).
For addtional stability during locking, please use the counter instrument (fig 23b).

figure 23a

figure 23b

Impact the tibial components with the tibial impactor (fig. 24a and 24b).

figure 24a **figure 24b**

After cement hardening, insert the PE-insert in the tibial joint. Insert the insert from behind, move it forward towards the anterior locking rim and push down upon the posterior part until it is locked securely (fig. 25a). Consider using the impactor for PE-insert (fig. 25b).

Although trial inserts are available, it is recommended to insert the final PE-insert at this time in order to reduce the surgery time.

figure 25a

figure 25b

Implantation of the femoral components

Connect the KRI and the RS stem in the correct rotational alignment. Insert the 25mm bar screw (fig. 26a) (50mm bar screw if an extension piece is used) and lock it with the swing wrench and the counter instrument (fig. 26b).

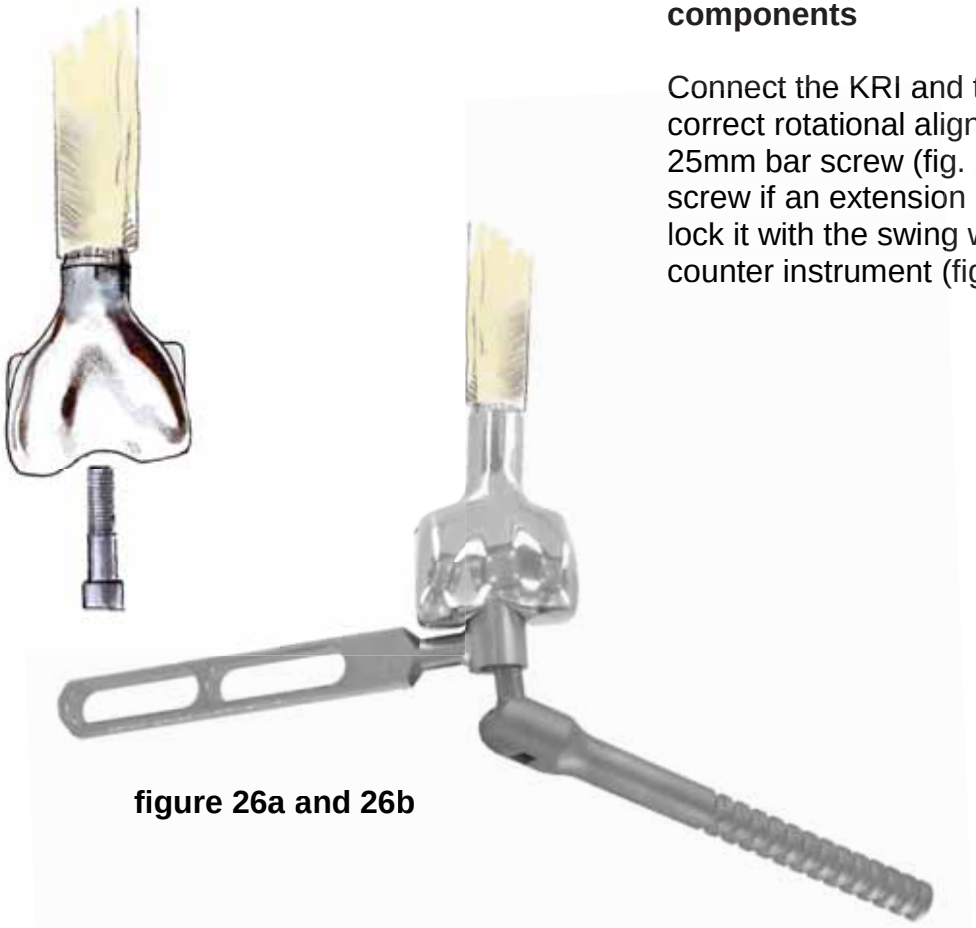


figure 26a and 26b

Insert and lock the safety screw in the same way (fig. 27a and 27b).

figure 27a and 27b

Assemble the MUTARS® coupling and the special MUTARS® instrument for locking mechanism. Therefore turn the attachment part of the lock by 110 degrees until it rests in the sleeve of the locking instrument (fig. 28a).

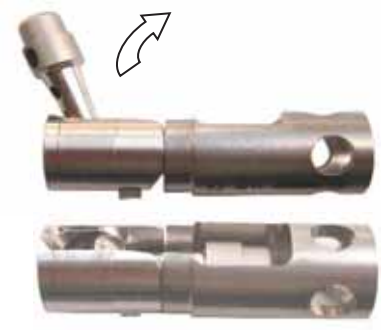


figure 28a

Insert the lock into the intracondular notch of the femoral joint (fig. 28b).

figure 28b

Use the socket wrench to turn the locking instrument and the lock clockwise by 180 degrees (fig. 29).

figure 29

figure 30a

figure 30b

The lock is correctly positioned when the attachment part falls out of the sleeve of the locking instrument (fig. 30a).
Remove the locking instrument.

The instrument to insert the mechanism into the tibia component is now placed in the hole of the coupling and the mechanism is guided into the hole of the tibial plateau (fig. 30b).

figure 31

figure 32

The coupling mechanism should be fully engaged and placed in the correct rotational position. The groove on the dome of the locking peg[1] is used to control the mechanism while locking fig. 30a) should be placed turned forward to enable locking (fig. 30b).

The positioner is inserted into the screw hole of the short stem of the coupling mechanism (fig. 31 and 32).

figure 33

figure 34

The coupling mechanism is held in place with the setting instrument while removing the positioner. Then the locking bolt is fixed with the torque wrench 3.5mm hex screw driver into the tibial component (fig. 33).

Be sure that the locking bolt is fully engaged into the tibia component (fig. 34).

A hexagonal torque wrench 3.5mm hex screw driver is used to screw in the Multilock security screw and to tighten the locking bolt (fig. 35a and 35b).

figure 35a

figure 35b

The implantation of the implant is now concluded. Stability and range of motion should be performed in flexion (fig. 36a) and extension (fig. 36b).

figure 36a

figure 36b

figure 37a

figure 37b

figure 37c

Removal of an implant

In case a tibia component should be removed the Multilock security screw and the locking bolt should be removed ventrally using the torque wrench 3,5mm hex screw driver.

The locking instrument is then used to remove the coupling from the femoral component.
.

The femoral component can now be removed using the slide hammer and the special extractor (fig. 37a and 37b).

The tibial extractor is now attached to the slide hammer and placed into the screw hole of the tibial component (fig. 37a).

The attachment is secured using the rod with the small chain (fig. 37b).

The tibial component is now removed using the slide hammer (fig. 37c).

IMPLANTS

***S**: For anti-infective treatment, silver coated implants are available.
***N**: For anti-allergic treatment, TiN coated implants are available.
***SN:** Implants with silver and TiN coating.

MUTARS® RS stem cementless

mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3 with implaFix® HA-coating acc. to ISO 13779-2

6762-1514	14/150mm
6762-1516	16/150mm
6762-1518	18/150mm
6762-1520	20/150mm
6762-2014	14/200mm
6762-2016	16/200mm*
6762-2018	18/200mm*
6762-2020	20/200mm*
6762-2516	16/250mm
6762-2518	18/250mm*
6762-2520	20/250mm*

**with locking holes for Ø 4,5mm screws*

MUTARS® RS stem cemented *N

mat.: implavit®; CoCrMo acc. to ISO 5832-4

6760-1215	12/150mm
6760-1415	14/150mm
6760-1615	16/150mm
6760-1815	18/150mm
6761-1220	12/200mm
6761-1420	14/200mm
6761-1620	16/200mm
6761-1820	18/200mm

MUTARS® RS extension piece 25mm HA

mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3 with implaFix® HA-coating acc. to ISO 13779-2

6730-0025	25mm

MUTARS® KRI M-O-M *N *SN incl. safety screw

mat.: implavit®; CoCrMo acc. to ISO 5832-4
mat. of counter screw: implatan®, $TiAl_6V_4$ acc. to ISO 5832-3

5720-0048	right
5720-0043	left

IMPLANTS

MUTARS® PE-insert
mat.: UHMW-PE acc. to ISO 5834-2

5721-0013	xsmall
5721-0002	small
5721-0001	standard
5721-0006	large

MUTARS® coupling 15mm
mat.: implavit®; CoCrMo acc. to ISO 5832-12

5720-1212

MUTARS® patella replacement cemented standard
mat.: UHMW-PE acc. to ISO 5834-2

5720-1000

Intramedullary plug
mat.: UHMW-PE acc. to ISO 5834-2

0299-4000	small
0299-4010	large

MUTARS® tibial spacer small *S
mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3

5810-0500	5mm rl/lm
5810-1000	10mm rl/lm
5810-1500	15mm rl/lm
5810-2000	20mm rl/lm
5805-0500	5mm ll/rm
5805-1000	10mm ll/rm
5805-1500	15mm ll/rm
5805-2000	20mm ll/rm

MUTARS® tibial spacer small *S
mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3

5800-2500	25mm small right/left
5800-3505	35mm small left
5800-5005	50mm small left
5800-3500	35mm small right
5800-5000	50mm small right

MUTARS® screw for tibial spacer
mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3

5720-1203	for 5mm spacers
5720-1204	for 10-50mm spacers

IMPLANTS

MUTARS® screw for KRI

mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3

5720-2508	M 8 x 25mm
5720-5008	M 8 x 50mm

MUTARS® tibial plateau M-O-M *N cementless incl. safety screw + screw for locking mechanism

mat.: implavit®; CoCrMo acc .to ISO 5832-4; Screw implatan®; $TiAl_6V_4$ acc. to ISO 5832-3 with TiN-coating

5751-0203 xsmall
5751-0200 small
5751-0205 standard
5751-0210 large

MUTARS® tibial plateau M-O-M *N *S cemented incl. safety screw + screw for locking mechanism

mat.: implavit®; CoCrMo acc .to ISO 5832-4; Screw implatan®; $TiAl_6V_4$ acc. to ISO 5832-3 with TiN-coating

5751-0303	xsmall
5751-0300	small *S
5751-0305	standard *S
5751-0310	large *S

screw for coupling

mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3 with TiN-coating

5720-1201

MUTARS® screw for tibial plateau M-O-M

mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3

5720-1205

MUTARS® stem for tibial plateau modular cementless

mat.: implatan®; $TiAl_6V_4$ acc. to ISO 5832-3

5756-1212	12 x 120mm
5756-1214	14 x 120mm
5756-1216	16 x 120mm
5756-1218	18 x 120mm
5756-1612	12 x 160mm
5756-1614	14 x 160mm
5756-1616	16 x 160mm
5756-1618	18 x 160mm
5756-2012	12 x 200mm
5756-2014	14 x 200mm
5756-2016	16 x 200mm
5756-2018	18 x 200mm

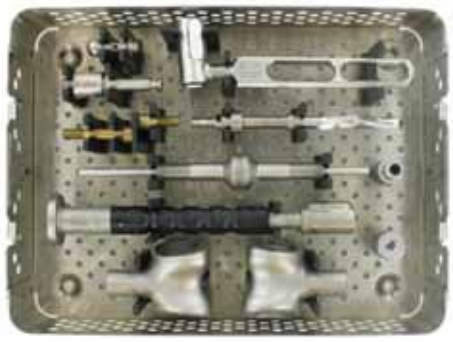
IMPLANTS

MUTARS® stem for tibial plateau modular cemented *N

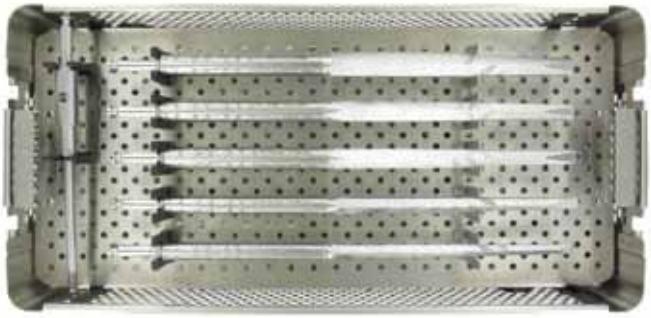
mat.: implavit®; CoCrMo acc. to ISO 5832-4

5755-1211	11 x 120mm
5755-1213	13 x 120mm
5755-1215	15 x 120mm
5755-1611	11 x 160mm
5755-1613	13 x 160mm
5755-1615	15 x 160mm
5755-2011	11 x 200mm
5755-2013	13 x 200mm
5755-2015	15 x 200mm

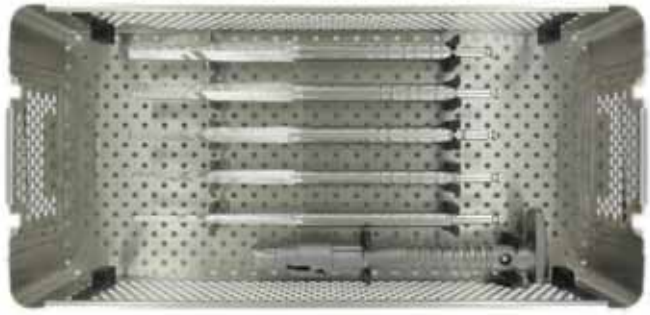
INSTRUMENTS



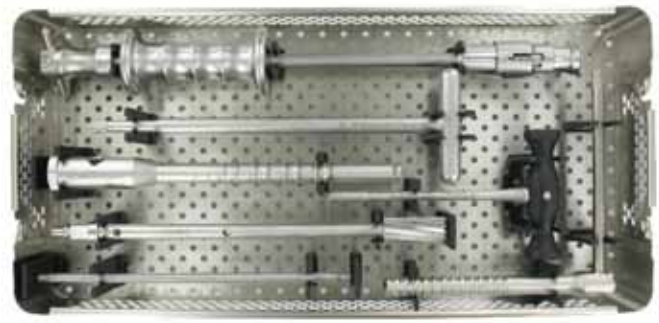
MUTARS® KRI M-O-M container
7999-5729



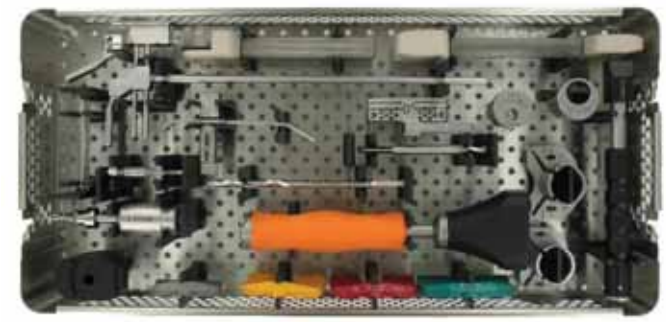
MUTARS® RS broach container - upper tray
7999-6721



MUTARS® RS broach container - bottom tray
7999-6721



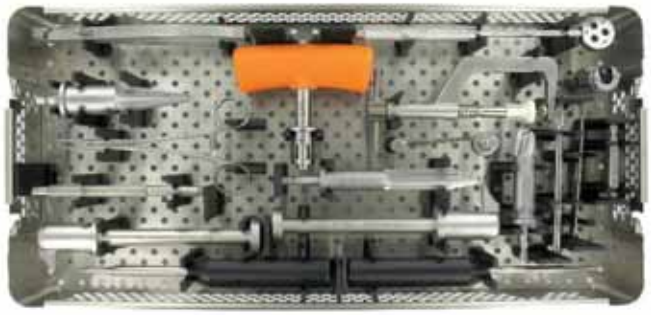
MUTARS® RS ES container 2
7999-6715



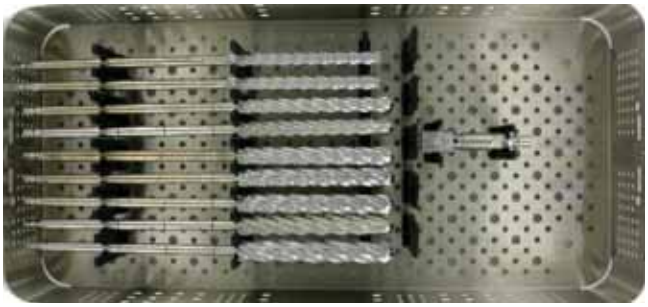
MUTARS® tibia container I
7999-5733

INSTRUMENTS

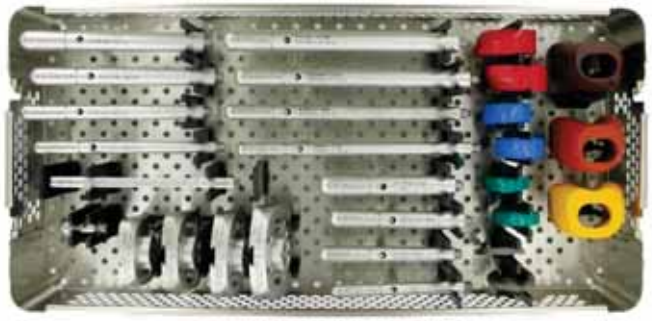
MUTARS® tibia container 2
7999-5738



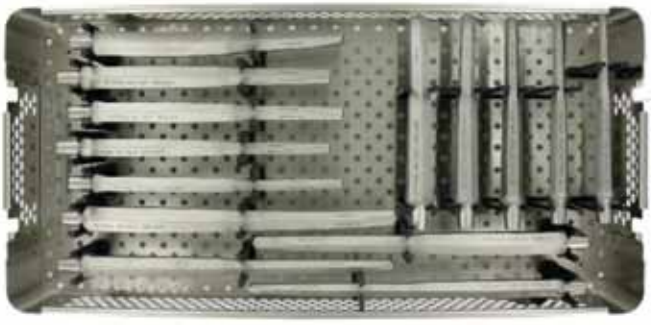
MUTARS® rigid drills container
7999-5735



MUTARS® tibia trial container
7999-5736



MUTARS® RS trial stem container
7999-6724



INSTRUMENTS

Content MUTARS® KRI M-O-M container
7999-5729

MUTARS® RS extractor for KRI M-O-M
6500-0017

MUTARS® extractor for femoral component
7610-0002

MUTARS® impactor for femoral component
7610-0000

MUTARS® counter instrument KRI/Distales Femur M-O-M
7230-1004

MUTARS® extractor for KRI
7230-1003

ACS® tibial drill
4221-0008

MUTARS® KRI trial implantat M-O-M
7720-0043 left
7720-0048 right

MUTARS® trial locking mechanism
7720-1200

MUTARS® KRI trial screw
7720-2508 M 8 x 25mm
7720-5008 M 8 x 50mm

MUTARS® RS extension trial piece 25mm
6500-0025

INSTRUMENTS

Content MUTARS® RS broach container – upper tray
7999-6721

MUTARS® RS rasp

6501-2012	12/200mm
6501-2014	14/200mm
6501-2016	16/200mm
6501-2018	18/200mm
6501-2020	20/200mm

MUTARS® RS stem extractor adapter ES

6500-3007

INSTRUMENTS

Content MUTARS® RS broach container – bottom tray
7999-6721

MUTARS® RS rasp

6500-1512	12/150mm
6500-1514	14/150mm
6500-1516	16/150mm
6500-1518	18/150mm
6500-1520	20/150mm

MUTARS® RS broach impactor
6500-0008

INSTRUMENTS

Content MUTARS® RS ES container 2
7999-6715

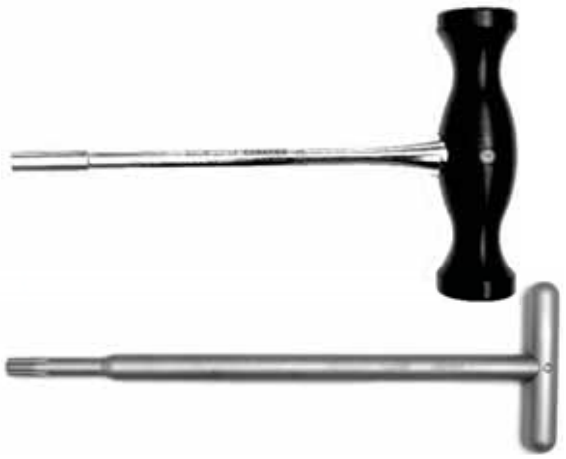
slide hammer with snap mechanism
6500-0012

MUTARS® RS ES stem impactor
6500-3000

MUTARS® RS guide rod ES
6500-3003

MUTARS® RS socket wrench SW 6mm
6500-0013

MUTARS® socket wrench 300mm
7420-0300



MUTARS® swing wrench long
7411-0001

MUTARS® RS reamer for metaphyseal part 21mm ES
6500-3021

INSTRUMENTS

Content MUTARS® Tibia Container 1
7999-5733

MUTARS® tibial impactor
7800-0008

MUTARS® impaction head
7800-0009

MUTARS® impaction head XS
7800-0010

MUTARS® spacer block
7755-0010

MUTARS® spacer block rotation
7755-0023

hexagonal screw driver ¼" chuck, 3.5mm
7512-0009

torque limiter ¼" chuck 7Nm
7512-0007

tibia cutting block revision 0°
7755-0054

I / M tibial alignment guide
7755-0024

INSTRUMENTS

MUTARS® tibial reamer guide
7755-0025 ± 2,5 ap
7755-0039 ± 2,5 ap x-small

fixation pin 77mm, D: 3,2mm
4223-0029 (4x)

Universal drill 6mm
7630-0106

tibial resection stylus 15mm
7700-0415

MUTARS® tibial centralizer sleeve 5mm
7755-0008

MUTARS® sleeve for tibial preparator
7755-0022

MUTARS® patella drill
7351-0000

MUTARS® trial insert
7721-0013 extra small
7721-0001 standard
7721-0002 small
7721-0006 large

MUTARS® impactor for PE-inlay
7210-0001

INSTRUMENTS

Content MUTARS® Tibia container 2
7999-5738

MUTARS® patella drill guide
7350-0000

ic patella clamp
7352-0001

or alternatively
MUTARS® patella clamp
7352-0000

drill 126 x 3,2mm
4221-0019 2x

pin inserter 3,2mm
4223-0006

pin extractor
7512-0800

or alternatively
pin extractor
4223-0007

ic T-handle Zimmer-Jakobs
4223-0023

resection check
4223-0009

MUTARS® instrument for locking mechanism
7720-1201

MUTARS® tibial reamer
7755-0003

extractor universal
7512-2026

INSTRUMENTS

setting instrument for locking mechanism
7751-1200

MUTARS® positioner for locking mechanism
7610-0003

MUTARS® tibial punch
7755-0004
7755-0028 xsmall

MUTARS® tibia preparator
7755-0021

MUTARS® tibia extractor
7755-0020

MUTARS® reamer for stem preparation
7330-1003

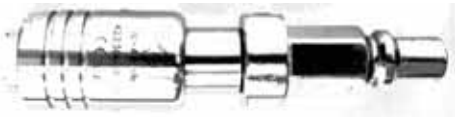
MUTARS® assembling forceps
7720-1202

INSTRUMENTS

content MUTARS® rigid drills container
7999-5735

MUTARS® rigid reamer

4220-4010.1	∅ 10mm
4220-4011.1	∅ 11mm
4220-4012.1	∅ 12mm
4220-4013.1	∅ 13mm
4220-4014.1	∅ 14mm
4220-4015.1	∅ 15mm
4220-4016.1	∅ 16mm
4220-4017.1	∅ 17mm
4220-4018.1	∅ 18mm



ic adapter outside A/O, inside ic canulated
7512-3602

INSTRUMENTS

Content MUTARS® tibia trial container
7999-5736

MUTARS® trial for tibia joint M-O-M
7751-0303 extra small
7751-0300 small
7751-0305 standard
7751-0310 large

MUTARS® trial tibial spacer
7800-2500 25mm small
7800-3500 35mm small
7800-5000 50mm small

MUTARS® trial tibial spacer
7810-0500 5mm rl lm
7805-0500 5mm ll rm
7810-1000 10mm rl lm
7805-1000 10mm ll rm
7810-1500 15mm rl lm
7805-1500 15mm ll rm
7810-2000 20mm rl lm
7805-2000 20mm ll rm

MUTARS® trial stem
7755-1211 11/120mm tibial; 11/160mm femoral
7755-1213 13/120mm tibial; 13/160mm femoral
7755-1215 15/120mm tibial; 15/160mm femoral
7755-1217 17/120mm tibial; 17/160mm femoral
7755-1611 11/160mm tibial; 11/200mm femoral
7755-1613 13/160mm tibial; 13/200mm femoral
7755-1615 15/160mm tibial; 15/200mm femoral
7755-1617 17/160mm tibial; 17/200mm femoral

7755-2011 11/200mm tibial; 11/240mm femoral
7755-2013 13/200mm tibial; 13/240mm femoral
7755-2015 15/200mm tibial; 15/240mm femoral
7755-2017 17/200mm tibial; 17/240mm femoral

MUTARS® trial locking mechanism
7720-1200

MUTARS® counter instrument for tibial plateau
7755-0027

INSTRUMENTS

Content MUTARS® RS trial stem container
7999-6724

MUTARS® RS trial stem

6511-1215	12/150mm
6511-1220	12/200mm
6511-1415	14/150mm
6511-1420	14/200mm
6511-1425	14/250mm
6511-1615	16/150mm
6511-1620	16/200mm
6511-1625	16/250mm
6511-1815	18/150mm
6511-1820	18/200mm
6511-1825	18/250mm
6511-2015	20/150mm
6511-2020	20/200mm
6511-2025	20/250mm

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